NOTES ON NEW OR RARE VIOLETS OF NORTHEASTERN AMERICA.

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I have had the privilege of examining the violets collected by Prof. Fernald the past season in Prince Edward Island and the Magdalen Islands, and also those collected the two previous years in Newfoundland. They conform for the most part to the forms found in eastern Quebec and in the mountainous regions of northern New England. In Newfoundland, *V. labradorica* seems to take the place of *V. conspersa*. The only white violets are *V. renifolia* var. *Brainerdii*, *V. pallens* (often with the petioles of summer leaves quite hirtellous), *V. incognita*, and its var. *Forbesii*. Not unexpectedly, *V. septentrionalis* and *V. nephrophylla* were found in Newfoundland. We miss, however, all forms of *V. canadensis* and *V. pubescens*, and the acaulescent *V. rotundifolia*, *V. sororia* and *V. affinis*, — five species rarely, if ever, found to the north or east of Maine.

V. CUCULLATA is widely distributed in these islands, and quite variable. The most common form, as in the Green Mts., is one in which the leaves under a lens appear more or less hirtellous, and the margin of the sepals "often interruptedly serrulate-ciliolate." This is the *V. prionosepala* of Dr. Greene. (Pitt. v. 99.) We do not believe it specifically distinct, but it may well pass as *V. cucullata* Ait., forma **prionosepala** (Greene).

Another departure from the quite glabrous form of the Middle Atlantic States is more serious. The long auricles of the persistent sepals have been considered a reliable character in *V. cucullata*. But in Newfoundland and the Magdalen Islands plants occur with short appressed auricles, though in other characters — foliage, flowers and seeds — conforming to normal *V. cucullata*. This we would mark off as:

VIOLA CUCULLATA Ait., var. **microtitis**, var. nov., auriculis sepalorum 1–2 mm. longis, multo brevioribus quam in forma communi.— Auricles of the sepals 1–2 mm. long, much shorter than in the ordinary form.— NEWFOUNDLAND: — damp thickets and open woods, Grand Falls, July 4, 1911; wet mossy spruce and larch woods, Grand Falls, July 5, 1911; low mossy and boggy spruce woods along Gander River, Glenwood, July 12 & 13, 1911; bog, Black Island, July 20,

1911; *Fernald & Wiegand*, nos. 5856, 5857, 5861, 5864. QUEBEC.—wet woods and thickets, Grindstone Island, Magdalen Islands, *Fernald & others*, no. 7773, July 17, 1912.

In the northwestern portion of the region covered by the Gray Manual we have to record the appearance of V. NOVAE-ANGLIAE,[1] heretofore known only from northern and central Maine.[2] It was collected by the late Dr. Fletcher at Maple Lake, near Parry Sound, Ont. Living plants, furnished by Dr. Fletcher in 1904, were for several years grown at Middlebury, Vt. In June, 1909, Dr. H. V. Ogden of Milwaukee sent live plants, collected "on a small sand island" Mercer, Wis.: and a year later, other plants, from Saxesville, Wis., 250 miles further south. From seeds of both, vigorous plants with large handsome flowers were obtained. Prof. Fernald has shown me also a specimen from Duncan Bay, Isle Royale, Mich., *W. S. Cooper*, Aug. 18, 1910. The species, thus, seems to occur with more or less frequency in the region of the Great Lakes.

V. RUGULOSA Greene, found in Minnesota, Iowa, and eastern Nebraska, should be added to the Gray Manual list. *V. Rydbergii* Greene, published a page later, is from the eastern slope of the Rocky Mts., but is hardly distinguishable from the Minnesota plant. Both have root-leaves much broader and larger than those of *V. canadensis*, and the upper stem-leaves are densely short-pubescent beneath, especially along the veins. But the most pronounced character is the presence, well underground, of long vigorous branching root-stocks, by means of which the plant spreads rapidly in the garden or in the wild. But this character is rarely seen in herbarium specimens and was apparently unknown to Dr. Greene when he described the species. I observed it first in plants under cultivation from Boulder, Colo. To ascertain whether this was also the habit of the Minnesota plant I applied to Prof. Clements, who kindly sent me living specimens with abundant stolons, not only from the University grounds but from its native haunts at Ft. Snelling.

V. EGGLESTONII,[3] a fine species with rich purple flowers, is also entitled to recognition in the Gray Manual. The type specimens

[1] RHODORA vi. 226, pl. 59; and vii. 1–3.

[2] Since the above was written, I have received specimens, both in flower and in fruit, of *V. novae-angliae* from the Province of New Brunswick:— Wet sandy shores, Lake Utopia, St. George, Charlotte Co., N. B.; *J. Vroom*, July & August, 1883. This is the earliest known collection of this species.

[3] Bull. Torrey Bot. Club xxxvii. 526, plates 34 & 35. 1910.

were collected by Mr. Eggleston at West Nashville, Tenn., May 26, 1909. But there is a specimen in the National Museum, collected near Nashville July, 1897, by Mr. Williamson, but named by Mr. C. L. Pollard *V. viarum* Pollard. A still older specimen is in the herbarium of the Missouri Botanical Garden, collected by Dr. A. Gattinger at La Vergne, Tenn. (15 miles southeast of Nashville), May 13, 1881. But it was of more interest to find at St. Louis a specimen from Bowling Green, Kentucky, collected by Miss Sadie F. Price April 11, 1899, labeled "*V. falcata* Greene."

V. SEPTEMLOBA LeConte, a most distinct and beautiful species of the coastal plains from N. Carolina to Mississippi, seems to occur, at least sporadically, in Virginia and even in Delaware. It was admitted into the revised edition of the Illustrated Flora on the evidence of a specimen from Virginia Beach collected by Mrs. N. L. Britton. Later a good specimen of LeConte's plant was seen in the herbarium of the Field Museum, Chicago, the ticket reading: "*Viola cucullata* var. *palmata* L. Newcastle Co'y, Del., W. M. Canby, coll." Unfortunately the date and the name of the town where found are lacking. But collectors in these localities should be on the watch for this species.

I take this opportunity to emend the names of three hybrids, two described from Lexington, Mass., and one from the Middle Atlantic States; the change is required by the recognition of *V. triloba* Schwein. as a species distinct from *V. palmata* L. But *both* species are found to cross with *V. fimbriatula*, with *V. cucullata*, and with *V. sagittata*, as follows: —

1. **Viola fimbriatula** × **triloba**, nom. nov.— *V. fimbriatula* × *palmata* Robinson, RHODORA viii. 53, pl. 70. March, 1906.

2. **Viola fimbriatula** × **palmata**, hyb. nov.— Not *V. fimbriatula* × *palmata* Robinson, from which in aspect it is markedly distinct.— Leaves ovate in outline, subcordate, obtuse, 3–5-lobed or -cleft on either side chiefly below the middle, finely pubescent especially on the petioles and along the veins of the lower surface; flowers, capsules and peduncles intermediate between those of the parents; plants quite infertile; offspring diversiform,— some with leaves like those of the hybrid parent, others with leaves uncut as in *V. fimbriatula*, and still others with deeply lobed leaves as in *V. palmata*, in all cases the width of leaf being intermediate.— East Lyme, Ct., *Miss A. M. Ryon*, Oct., 1905; rocky woodlands, Yonkers, N. Y., *Brainerd*, Sept. 9, 1905; Spring Valley, N. Y., *Miss E. M. Kittredge*, May 26, 1911; Sylvan Beach, Oneida Co., N. Y., *H. D. House* 1244 (in part), July 11,

1905; Palmer's Glenn, N. Y., *J. Bishop*, 1909; Mt. Tryon (alt. 760 m.) Tenn., *E. Brainerd*, April 21, 1910.

3. **Viola cucullata** × **triloba**, nom. nov., *V. cucullata* × *palmata* [var. *dilatata* authors not Ell.], RHODORA viii. 56 (March 1906).

4. **Viola cucullata** × **palmata**, hyb. nov., not *V. cucullata* × *palmata* of RHODORA viii. 56.— Leaves nearly glabrous, broadly cordate-ovate, lobes as numerous as in *V. palmata*, but shorter; cleistogamous flowers intermediate in form to those of the parent species, on elongate ascending peduncles; auricles long, slightly setulose, sepals otherwise glabrous; capsule bearing few seeds.— East Lyme, Ct., *Miss A. M. Ryon*, Oct. 4, 1906.

5. **Viola sagittata** × **triloba**, nom. nov., *V. palmata* [var. *dilatata* authors not Ell.] × *sagittata*, RHODORA viii. 54, except specimen last cited.

6. **Viola palmata** × **sagittata** hyb. nov., not *V. palmata* [var. *dilatata* authors not Ell.] × *sagittata*, RHODORA viii. 54.— Leaves ciliate and more or less pubescent, subcordate, with 6-8 acute slender lobes chiefly towards the base; capsules infertile.— Garrison's, N. Y., *Ed. S. Denton*, May, 1886 (characterized by Dr. Gray as "*V. palmata* towards *sagittata*"); Staten I., N. Y., *Philip Dowell* 4518 b, July 18, 1906; West Orange, N. J., *Philip Dowell* 4795, June 22, 1907.

MIDDLEBURY, VERMONT.

ARENARIA CAROLINIANA IN RHODE ISLAND.— Several plants of *Arenaria caroliniana* Walt. were found by the writer in the salt-marsh back of the sand-dunes at Weekapaug, Rhode Island, Sept. 1, 1912. They were growing on a slightly elevated, but dry, spot in the meadow and were confined to the one locality. Some of them were still in blossom on the 22nd of the month.

Through the kindness of Prof. Fernald, I am enabled to give the previously printed records (under the synonymous name *Arenaria squarrosa*) of this plant for New England, as follows:

"Arenaria squarrosa Michx. Torrey & Gray, i, 179.

In Block Island, Dr. Robbins, Sept., 1829."

Oakes in Hovey's Magazine, xiii, 218 (1847).

"Arenaria squarrosa Mchx., Robbins, 1829.

S. T. O." (Stephen T. Olney) in note on the rare plants of Block Island, in Bulletin Torrey Botanical Club, v, 38 (1874).

The above records seem to have been overlooked by all the manual-makers.

Specimens from Weekapaug have been placed in the Herbarium of the New England Botanical Club.— JOHN H. SAGE, Portland, Connecticut.